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ABSTRACT

The Monongalia County (West Virginia) Even Start Program is a comprehensive, rural, home-based family literacy program that provides families with adult literacy education, parenting education, and early childhood education. Although all Even Start programs conduct some home visits, the Monongalia County program is unique in that home visits are the primary service delivery mechanism. Following an overview of the national Even Start program and the Monongalia County program, this report describes an evaluation of program impact on the vocabulary development of child participants. The sample consisted of 32 children with an average age of 4 years, 4 months, and included 5 children for whom English was a second language (ESL) and 10 children with an active individualized education plan (IEP). Even Start staff administered the Peabody Picture Vocabulary Test-III (PPVT-III) to the children on a pretest-posttest basis during the 1998-99 program year. Most children had 7-8 months of program participation. From pretest to posttest, PPVT-III scores increased significantly for the full group and the subgroups. The effect size of the point gain was "moderate" for the full group, "large" for the ESL group, and "very large" for the IEP group. The PPVT-III average age-equivalent score increased 13 months during an average treatment period of 7 months. Therefore, the children in the sample nearly doubled the vocabulary growth expected of them. (Contains 20 references.) (SV)

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Merrill L. Meehan

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Evaluation of the Monongalia County Schools Even Start Program Child Vocabulary Outcomes

by:

Merrill L. Meehan
Director, REL Evaluation

July 1999

Planning, Research, and Evaluation Unit
Post Office Box 1348
Charleston, West Virginia 25325

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Post Office Box 1348
Charleston, West Virginia 25325-1348
304/347-0400
800/624-9120 (toll-free)
304/347-0487 (Fax)
aelinfo@ael.org
http://www.ael.org

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EXECUTIVE SUMMARY

The Even Start Family Literacy Program, started in 1989, is a national program that addresses the developmental and educational needs of targeted families. First, the literacy and educational needs of the adults in the family are identified and addressed. Second, effective parenting skills for the adults are taught. Third, the preschool readiness needs of the children in the family are addressed with at-home and/or center-based early childhood education sessions. States solicit grant applications from local agencies and make awards on a competitive basis.

Monongalia County Even Start Program

The Monongalia County (WV) Even Start Program began in 1993. As required, the program consists of three interrelated approaches to address family literacy and prepare children for entrance into schooling: adult education, parenting education, and early childhood education.

The unique feature of the Monongalia County Even Start Program is that it is mainly a home-based program. While the law requires that all Even Start programs conduct *some* home visits, in the Monongalia County Program home visits are the *primary* service delivery mechanism. Four family educators work with their assigned families to develop and schedule a plan of service. Typically, these biweekly home visits last about one and one half hours each. A home visit usually begins with the collection of books and associated toys or materials loaned during the prior visit and then moves into a learning activity with the child. Next, while the child is occupied, the Family Educator discusses child development issues or parenting concerns with the parent. This is followed by some adult education. The home visit concludes with an inquiry about other needs the family might have that might be hindering progress in educational or other areas and then scheduling the next visit.

Evaluation Design

In the fall of 1996, program staff contracted with AEL, Inc. (formerly Appalachia Educational Laboratory) in Charleston, West Virginia, to conduct an independent evaluation of the Even Start Program. Overall, AEL's first evaluation (Meehan, 1997) concluded that the Monongalia County Even Start Program was a comprehensive, rural, home-based family literacy program that produced many positive impacts on the adults and children studied in the random sample. A second evaluation of the program was conducted by AEL staff on a sample of families *not* in the first sample and with different assessment instruments. This second evaluation (Meehan, 1998) showed much more impact on the adults in the mathematics areas (number operations and problem solving) than in the area of reading comprehension. On the parenting instrument, it was concluded that the program had some impact on parents' internal

locus of control and self-esteem but little impact on their parental responsibility and no impact on their parenting efficacy.

With two evaluations completed using two different instruments each to assess adult/parent outcomes and just one instrument to assess child outcomes, the Monongalia County Even Start staff chose to explore other child outcome measures for use in the 1998-99 program year. Staff selected the widely known *Peabody Picture Vocabulary Test-III* (PPVT-III) as a new child outcome measure. Staff administered and scored the PPVT-III to a sample of Even Start children on a pretest-posttest basis in the 1998-99 year. Even Start staff contracted with AEL staff to statistically analyze the PPVT-III scores as the third evaluation in the series. The purpose of this evaluation effort was to analyze, display, and discuss the pre- posttest administration of the PPVT-III measure in the one year.

The number of children in the sample was 32. This was less than the number of families in the program because not all children completed both pretest and posttest administrations of the PPVT-III. There were two subgroups within the sample: five in the English as second language (ESL) subgroup and ten in a subgroup that had active individualized education plans (IEP). Data analyses included descriptive statistics on treatment months and PPVT-III scores. T-tests for dependent means by the matched pairs technique were computed for the full group and the two subgroups. PPVT-III age equivalent scores also were analyzed, and effect sizes were computed.

Findings

The average age of the 32 children in this study was 51.66 months or four years and four months. The mode and median age in months both were 51.00.

The treatment period for this evaluation was the 1998-99 Even Start program year. Of the 32 children with both scores, 15 had eight months of treatment, 10 had seven months, and the rest had nine (N=1), six (N=2), five (N=2), or three (N=2). The mean number of treatment months was 6.93 with a standard deviation of 1.63.

The PPVT-III standard scores could range from 90 to 160 points. The pretest mean score for the full group was 90.53 with a standard deviation of 14.37. The posttest mean increased to 99.81 while the standard deviation decreased to 9.38. This gain yielded a t-value of 4.51, which was significant at the .0001 level. The effect size for the gain in the vocabulary score was .65, which is "moderate" in Cohen's (1977) set of descriptors.

For the active IEP subgroup of 10 children, the vocabulary gain was much larger than for the full group. The IEP gain was a full 15.50 points. The t-value of 3.56 was slightly less (owing to the smaller size of the subgroup), but still it was significant at the .01 level. The effect size was 1.13, which is .33 above the start of the "large" category in Cohen's scheme. Thus, the

descriptor of "very large" was used to describe the effect size for the active IEP subgroup on the vocabulary measure.

The PPVT-III scores for the ESL subgroup of five increased 14.80 points, a much larger increase than that of the full group. The t-value was 3.37 and the probability was .028, significant at the .05 level. The ESL subgroup effect size was 1.05, which is "large" in Cohen's scheme.

The average age equivalent score of vocabulary for the full group at pretest was 3.71 or three years and seven months. At posttest, it was 4.84 or four years and eight months.

Conclusions

Several conclusions were drawn from the findings of this evaluation. First, the 9.28 point gain on the PPVT-III by the full group was statistically significant and its effect size was "moderate." Thus, the vocabulary gain for the full group was meaningful both statistically and practically. Second, the 15.50 point gain on the PPVT-III for the active IEP subgroup was statistically significant and its effect size was "very large." Thus, we conclude with much confidence that the vocabulary gains for the active IEP subgroup were meaningful in both the statistical and practical sense. Third, the 14.80 point gain for the ESL subgroup was "large." Therefore, it was concluded with much confidence that the PPVT-III gain for the ESL group was meaningful in both the statistical and practical sense.

The PPVT-III average age-equivalent score increased from 3.7 at pretest to 4.8 at posttest, or 13 months. The average pretest to posttest treatment period was seven months. This results in a net gain of 6 months above the growth in vocabulary expected for normal development. Therefore, it was concluded that as a result of being in the Monongalia County Even Start Program, the children in the sample nearly doubled the vocabulary growth expected of them.

Recommendations

Even Start staff can be certain that their program impacts on the vocabulary gains of children in their families. Too, these vocabulary gains are nearly double what would be expected in a typical treatment year. Staff should acknowledge and celebrate these student vocabulary gains.

The PPVT-III is a well-known and respected measure. With these convincing findings in vocabulary gains by children in the Even Start program, staff may want to continue to administer the PPVT-III to all children in the Even Start program in the future.

INTRODUCTION

This section presents an overview of the National Even Start Program, a description of the Monongalia County Even Start Program, the purposes and objectives of this evaluation, and an explanation of the audience for this report.

The National Even Start Program

The Even Start Family Literacy Program is a national literacy program that identifies and addresses the educational and developmental needs of targeted families. These developmental needs of eligible Even Start families are addressed three different ways. First, the educational and literacy needs of the adults in the family are identified and addressed. Second, effective parenting skills for the adults are taught. Third, the developmental and preschool readiness needs of the children in the family are addressed with at-home and/or center-based early childhood education sessions.

The national Even Start program began in 1989. Legislative authority for the program is in the Hawkins-Stafford Elementary and Secondary School Improvement Amendments of 1988 to the Elementary and Secondary Education Act of 1965. Specifically, the program is Part B, Chapter 1 of Title I in Public Law 100-297 (Tao, Swartz, St. Pierre, & Tarr, 1997). Two years later, the original Even Start legislation was amended with the passage of the National Literacy Act (Public Law 102-73). Reauthorization for the Even Start program was provided by the Improving America's Schools Act as Part B of Title I.

Emphasis on Families

The purpose of the Even Start program is to "help break the cycle of poverty and illiteracy" by working with low-income *families* to improve their educational opportunities. The legislation spells out those educational opportunities as being adult basic education or adult literacy, parenting education, and early childhood education. Further, the Even Start legislation requires that these three educational areas be integrated ". . . into a unified family literacy program" (P.L. 103-382, Sec. 1201, as cited in Tao et al., 1997, p. 2). The Even Start program represents an innovative combination of adult literacy or adult basic education, parenting education, and early childhood education.

Criteria for eligibility into the Even Start program were established in the legislation. Participants had to be (1) a parent or parents who (a) are eligible for participation in an adult basic education program under the Adult Education Act, or (b) are within the state's compulsory school attending age ranges; and (2) the child or children, from birth through age seven, of the

parent or parents described in (1). The (b) part of the parent eligibility requirement was new in 1995-96, which expanded the Even Start program to include teen parents for the first time.

Program Services

Even Start program services can be divided into two types: (1) "core" educational services and (2) ancillary support services. As mandated in the Even Start legislation, the "core" educational services are in three interrelated areas:

(1) high-quality instructional programs that promote adult literacy

(2) high-quality instructional programs that empower parents to support the educational growth of their children

(3) developmentally-appropriate early childhood educational services and preparation of children for success in regular school programs (P.L. 103-761, Sec. 1205)

The legislation requires that Even Start programs provide these core services to parents and children jointly and also provide some home-based services.

Even Start programs are required to provide support services to participating families. The twin support services of child care and transportation for the purposes of enabling parents and their children to participate in Even Start programs are named specifically in the law. Local programs typically provide a range of other support services to their participating families, including health care, vision and hearing screening, employment assistance, mental health referrals, cross-agency assistance, nutrition education, referrals for screening or treatment for chemical dependency, and public library card attainment assistance.

Even Start initially began as a demonstration program administered by the U.S. Department of Education (USDE). The USDE funded 76 Even Start projects in fiscal year 1989 for a total of $14.5 million. In 1991, the Even Start program expanded to the level of $49.7 million. Then, in 1992, 100 new Even Start projects were started, totaling $70 million. And, according to the law, since the total budget for the program exceeded $50 million, its administration was transferred to the states.

States receive their Even Start funding based on a formula related to the allocation they receive from the federal government for their Title I Program. The states then solicit grant applications and make awards on a competitive basis. The law provides a portion of the state's allocation for state-level administration and management.

The Monongalia County Even Start Program

Program Setting Information

Monongalia County, West Virginia, is located in the north central part of the state, bordering the Pennsylvania state line. The population of the county, according to the 1990 U.S. Census, was 75,599 in its 417.85 square miles, or 180.92 residents per square mile. The county seat is the city of Morgantown, the fifth largest city in West Virginia. Approximately 34% of the total county population lives in Morgantown, with the remaining 66% living in the outlying, mostly rural and mountainous communities (Even Start Staff, 1995, p. III-3). Morgantown also is the home of West Virginia University, the largest university in the state.

The Monongalia County school system had 10,079 students in the 1996-1997 school year in grades K to 12. There were 28 schools in the system and 598 teachers (Quality Education Data, 1996, p. 14). In 1995, 3,615 (35%) of the system's children qualified for free and reduced lunches (Even Start Staff, 1995, p. III-3). As in all of West Virginia, the vast majority (93%) of the school children are Caucasian. It is reported that 54% of the system's students are college-bound, while the dropout rate of 17.5% is very close to the state's average of 17.7% in 1995. The total number of computers available for instructional use was reported as 939, of all brands (Quality Education Data, 1996, p. 14). Each school does have a Local School Improvement Council and a Faculty Senate. The predominant organizational arrangement for the 20 elementary schools is K-5 or K-6, although there is one K-3 school, two K-4 schools, and one school with no kindergarten. There are two middle schools (one grades 5-8 and one grades 6-8), two middle or junior high schools of grades 7-9, one small grades 7-12 school of 415 students, two large high schools (one grades 9-12 and one grades 10-12) of over 1,100 students each, and one vocational-technical education center. The adult education center is housed in the vocational-technical center. The Monongalia County Even Start Program is housed in the Dorsey Education Center, a renovated school building that also houses the administrative offices for the Title I Program, the Head-Start Program, the Early Head Start Program, and two Head Start classrooms.

Poverty, unemployment, and illiteracy exist in Monongalia County. Even Start staff reported 38% of the school district's students are from low-income families (Even Start Staff, 1999). The total caseload of families receiving health and/or human services in the county was reported as 5,174 in July 1994 (Even Start Staff, 1995, p. III-3). The number of persons unemployed in 1995 was reported as 2,580, which placed the county in the top seven in the state in this category. Recent information shows 10,589 (25%) of the county's adults do not possess a high school diploma (Even Start Staff, 1999). There are 11 Title I schoolwide projects in the district's elementary schools where 51 to 84% of the students qualify for free and reduced-price lunches.

Program Description

The Monongalia County Even Start Program, one of seven in the state, began in 1993. The program consists of three interrelated approaches to address family literacy and to prepare children for entrance into schooling. These three approaches are adult education, parenting education, and early childhood education. The Even Start staff explain their goals as follows.

Adult Education - to provide and strengthen opportunities that will increase the literacy and education of parents

Parenting Education - to help parents gain competence in effective parenting practices that will maximize their child's development and assist them in becoming full partners in their child's education

Early Childhood Education - to assist children in reaching their full potential as learners (1995, p. III-1)

The Even Start program in Monongalia County is designed to provide simultaneous education services to participating parents and their children. The program has been designed to inform and educate parents on how important their involvement is in their child's education and then to teach parents how to achieve this goal. The Monongalia County Program staff has received training in the Parents As Teachers (PAT) program and has adapted it for its parenting education curriculum. The PAT is a nationally-validated home-school partnership program designed for 0- 5-year-old children. Its purpose is to provide the training and curriculum to support parents in giving their children the best possible start in life (Even Start Staff, 1995, p. III-1).

In addition to the PAT curriculum, the Monongalia County Even Start Program has developed and implemented its own family literacy model. This locally-developed model emphasizes children's literature in fostering cognitive and educational growth in the family unit. A unique component of this model is that the program has developed an extensive lending library of children's books; developmentally-appropriate toys; and other learning materials such as crayons, paints, markers, and art paper. These literacy development materials are loaned to Even Start families during regular, planned home visits. For example, a young boy might choose a book such as *Tommy The Truck* to read and a Tonka truck might be brought for him to play with before the next home visit by the Family Educator (described below).

The unique feature of the Monongalia County Even Start Program differentiating it from most other programs is that it is primarily a home-based program. While the law requires that all Even Start programs conduct *some* home visits, in the Monongalia County Program, home visits are the *primary* service delivery mechanism. The four Family Educators work with their assigned families to develop and schedule a plan of service. Most families are visited every other week in their homes. Typically, these biweekly visits last about one and a half hours each, but vary according to the family's needs and other factors. During visits, the Family Educator provides meaningful instruction to both the child or children present and to the parent. Typically,

a home visit begins with the collection of books and toys loaned during the prior visit, and then moves into a learning activity that focuses on literacy with the child or children. Next, while the children are occupied, the Family Educator discusses child development issues or addresses parenting concerns such as discipline (Even Start Staff, 1995, p. III-2). Even Start Staff reported making a total of 1,103 home visits in 1997-1998 and circulating 3,388 books (1998, P. III-31).

During home visits, the Family Educator also completes assessments of other family needs. Here, the occasion of being in the home is used to inquire and talk about other needs that might be hindering progress in educational or other areas. Examples include vision and hearing screening; assistance in securing family benefits; assistance in looking for and obtaining jobs; help in receiving treatment for chemical dependency; and help in enrolling and transporting children to Head Start, kindergarten, or other school programs. When appropriate, the Family Educators will make referrals to other agencies in the county to which the Even Start program is linked—many in a formal, collaborative manner. Also, whenever it can be arranged, the Family Educators encourage and foster communications across the participating families and sponsor events and activities for all parents or subgroups of parents with similar needs. A group meeting at the local public library, where parents received their own library card, is one example.

Figure 1 is a graphic depiction of the Monongalia County Even Start Program with its eight essential components. This graphic portrayal of the program is a product of the prior evaluation of the Monongalia County Program (Meehan, 1997).

Program Information and Accomplishments

As part of its record keeping and reporting functions, the Monongalia County Even Start Program summarizes and reports on the program at the end of each project year (June). Staff prepare a report of their data, with numerous tables and charts, for their own and others' use. The following paragraphs are drawn from the data supplied in staff's report (Even Start Staff, 1999) and serve to describe the program, its families and their characteristics, and selected program accomplishments.

In June of 1996, 43 families in the Monongalia County Even Start Program participated in at least two of the program components (parenting education and early childhood education). The composition of families in the program was 27 (63%) couple households and 16 (37%) single households. Collectively, these families have 82 children participating in the program. The average number of children for all families was 2.3, but there was a difference across family type in that the average number of children in the couple households was 2.5, while the average in the single households was 1.8 children.

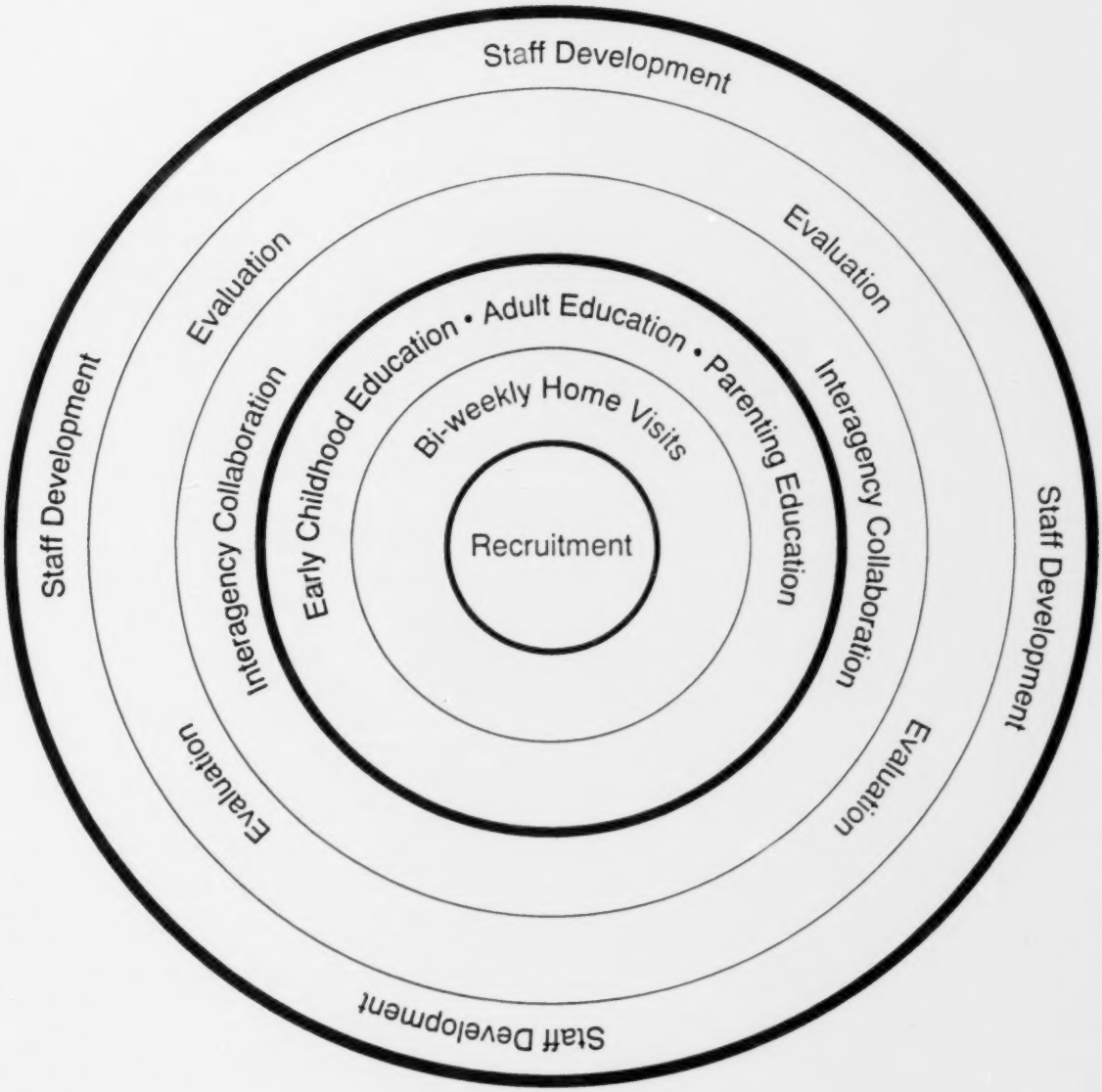

Figure 1. Graphic Depiction of the Monongalia County Even Start Program

The distribution of the ages of the 82 children was rather even, ranging in number from 8 to 15. There were more children in the 4- and 5- year old category, (14 and 15 respectively) followed by 11 and 10 in the 2- and 3- year old categories, respectively. There were 8 children in each of the 0-1-, 1-, 6-, and 7- year old categories. The number of 4-year-olds participating in the Even Start program decreased slightly from 19 in the 1996-1997 year to 14 in the 1997-1998 project year. The percentage of those 4-year-olds enrolled in Head Start is viewed as one measure of this program's success. Staff figures show a steady increase in the percentage of 4-year-olds enrolled in Head Start from 30% in 1993-1994, to 57% in 1994-1995, to 67% in 1995-1996, to 83% in 1996-1997. There was a slight decline to 71% in the 1997-1998 year.

The average yearly income for all 43 families in the Monongalia County Program in 1997-1998 was $11,257. However, this varied greatly by family type. For couple households in the program, the average family income was $13,160; for single households, the average family income was $7,592. The family incomes ranged from a low of $2,412 up to a high of $28,000.

The 1999 report prepared by Even Start staff displayed data across the program years (Even Start Staff, 1999). For example, 217 children have benefitted by participation in Even Start and 11,231 books have been circulated to their homes over the years. Even Start is a long-term program for families: seven families have participated for 4 years, twenty-one families for 3 years, and fourteen families for 2 years. The average hours the adults spend in adult education per year is 13.2. Sixty parents in the program have returned to an educational setting (17 earned a GED or EDP) and 63 parents attained a job from the training they received. Since the program began, 3,296 home visits have been made and 5,025 hours of instruction have been provided.

Comprehensive Evaluation

In the fall of 1996, program staff contracted with AEL, Inc. (formerly, Appalachia Educational Laboratory) in Charleston, West Virginia, to conduct an independent evaluation of the Even Start program during its fourth year of operation. This evaluation was more comprehensive than previous efforts and was designed to analyze client outcomes data collected by staff, and to collect new qualitative data about the program and its processes. The four objectives of AEL's evaluation were (1) to identify the essential components of the program and the implementation variation of each component, (2) to evaluate the implementation of each of the program's components, (3) to assess the adult and parenting education outcomes of the program's Sample Study adults, and (4) to assess the early childhood education outcomes of the program's Sample Study children.

The Monongalia County project was one of the 57 sites randomly selected to be in the special Sample Study conducted nationally by Abt Associates. More detailed participation and outcome data were collected from parents and children in the Sample Study and also there were additional criteria to be included in the sample. This dramatically reduced the Monongalia County subsample to 16 families out of the total of 62 in the program in 1996. There was some attrition within the subsample. One parent (mother) and one child from each of the 16 families were targeted for the expanded data collection.

Data for the AEL evaluation were collected in a variety of ways, including program records, observation of events, face-to-face interviews, and seven participant outcome measures. For adults, the Comprehensive Adult Student Assessment System (CASAS) Life Skills test was used to assess reading and mathematics literacy (CASAS, 1997), while the Home Screening Questionnaire (HSQ) assessed parenting skills (Coons, Gay, Fandal, Ker, & Frankenburg, 1981). For each child, the Preschool Inventory (PSI) assessed school readiness skills (Abt Associates, 1994) and the Preschool Language Scale-3 (PLS-3) measured language development (Zimmerman, Steiner, & Pond, 1992). The three PLS-3 scales were Auditory Comprehension, Expressive Communications, and Total Language. These seven outcome measures were administered three times over the two treatment years: pretest, posttest (end of first year), and follow up (end of second year). Statistical analyses of the outcome measures were t-tests for dependent means by the matched pairs technique. Effect sizes were computed for each t-test followed by items or points per treatment month gained (or lost). Graphic displays of each client's score on each measure were designed and published in the final report (Meehan, 1997).

Thirteen conclusions were drawn from the evaluation findings, some of which are summarized here. The completed Innovation Configuration Matrix of the Monongalia County Even Start Program is an effective communication device to describe and differentiate this particular program from others, while the depiction of the eight essential components in six concentric circles is an accurate and useful portrayal of the program (see Figure 1). It was concluded that the program had a large impact on all three adult outcome measures: reading literacy, mathematics literacy, and parenting skills. The largest effect sizes were for the first of the child outcome measures—school readiness. From these results, it was concluded that the Monongalia County Even Start Program had tremendous impact on children's readiness for school outcomes—nearly double that expected for normal child growth. Regarding child language development, the program had some impact on each of the three PLS-3 scales, but not as much impact as on the school readiness measure. In the area of needed improvements, there was not enough service delivery nor outcome data on the fathers in the subsample families to analyze. Fathers have not been as involved in the Even Start program as they should be.

Overall, AEL's first evaluation (Meehan, 1997) concluded that the Monongalia County Even Start Program is a comprehensive, rural, home-based family literacy program that produced many positive impacts on the adults and children studied. It was concluded that the Monongalia County Program staff have designed and implemented an effective rural, home-based Even Start Program for clients.

Parent Outcomes Evaluation

A second evaluation of the Monongalia County Even Start Program was conducted by AEL staff in the 1997-98 program year. The main purposes of this evaluation were (1) to evaluate the impact of the program on a sample of families *not* in the previous study in terms of adult and parenting education outcomes, and (2) to evaluate the program's original parenting education literacy materials. Four objectives were designed to address those two purposes: (1) to assess the adult education outcomes of a sample of the adults, (2) to assess the parenting

education outcomes of a sample of the parents, (3) to compare the outcome measures used in this evaluation with those used in the prior evaluation, and (4) to evaluate the program's original parenting education literacy materials (Meehan, 1998).

The evaluation design for the adults was the pretest-posttest administration of two paper and pencil instruments. The *Adult Basic Learning Examination* (ABLE) is a set of tests covering the basic areas of reading, mathematics, and language arts (Karlsen & Gardner, 1986a, 1986b, 1986c). Four ABLE scales were used in this evaluation and the trained Even Start Family Educators administered and scored them. The Parenting Index (PI) instrument is a combination of three previously-developed scales related to parenting (J. Tucker, personal communications, August 14, 1998). The PI yields four scale scores: parenting efficacy, parental responsibility, internal locus of control, and self-esteem. The Family Educators administered and scored the PI. Learner verification protocols were one-page instruments of seven to nine items—mostly constructed-response type—designed to assess the four original parenting education literacy materials.

The number of adults with completed pretests and posttests of the two outcome measures varied; 13 for the ABLE instrument and 32 for the PI parenting education measure. The treatment period for ABLE spanned several years, while the treatment period for the parenting education measure was the 1997-98 program year. A small, separate sample of parents completed the learner verification protocols and there was no connection between these measures and the two outcome measures. The pretest-posttest scores were analyzed with t-tests for dependent means by the matched pairs technique on each of the seven outcome scales. Next, effect sizes for the t-tests were computed and effect size descriptors were used to describe those numerical results.

With respect to the literacy materials, an AEL evaluator analyzed the learner verification protocols completed by the parents. Each of the four literacy guides were evaluated separately and then a summary was prepared related to the multiple criteria of interesting, understandable, informative, utility, and attractiveness.

The results were presented in tables and narrative copy (Meehan, 1998). Then, conclusions were drawn from those results, many of which are summarized here. Regarding the ABLE instruments, the Monongalia County Even Start Program had some impact on parents' reading comprehension, a moderate impact on parents' number operations, a very large impact on parents' problem solving, and a large impact on their total mathematics scale score. Across the four ABLE scales, the Even Start program had much more impact in the mathematics area than in the reading comprehension. With respect to the PI instrument, it was concluded that the program had no impact on adults' parenting efficacy, little impact on adults' parental responsibility, some impact on parents' internal locus of control, and some impact on parents' self-esteem. From the field test of the four parenting education literacy materials it was concluded that they were very good in terms of being interesting, understandable, informative, and having utility. However, it was concluded that the materials were poor in terms of their attractiveness, but that they could be improved rather easily.

With this second AEL evaluation completed, Even Start staff have evidence of positive outcomes of two different instruments for each of the two major areas of adult education and parenting education. There is no single, "best" instrument for either component. Deciding which instrument to use is a decision for staff to make after a careful discussion of relevant selection criteria (e.g., cost, ease of administration, relation to curriculum/services, etc.).

Purpose of this Evaluation

With two evaluations completed using two different instruments each to assess adult/parent outcomes and just one instrument (PLS-3) to assess child outcomes, the Monongalia County Even Start staff chose to explore other child outcome measures to administer during the 1998-99 program year. After reviewing several alternative measures, staff selected the widely-known *Peabody Picture Vocabulary Test-III* (PPVT-III) as a new child outcome measure. Staff administered the PPVT-III to a sample of Even Start children on a pretest-posttest basis in the 1998-99 year.

The Even Start staff contracted with AEL staff to statistically analyze the PPVT-III scores from their administration. This was the third evaluation of the Even Start program by AEL staff. Too, it was much narrower in scope than either of the prior evaluations. The main purpose of this evaluation was to take the PPVT-III testing results sheets compiled by the Even Start staff, create an SPSS database for the scores, analyze the data with appropriate statistical techniques, display and discuss the results, and draw conclusions from those results. The sole purpose of this evaluation effort was to analyze, display, and discuss the results of the Even Start staff's administration of the PPVT-III measure to a sample of Even Start Family children in the 1998-99 program year.

Audience for this Report

The primary audience for this report is the Monongalia County Even Start Program staff and the host agency, the Monongalia County (WV) School District. This report is expected to be useful to staff to document the impact of the program on the vocabulary of the children in Even Start families, and to make decisions regarding the usefulness of the PPVT-III instrument in assessing child literacy outcomes. Secondary audiences include state administrators of the Even Start Program, administrators interested in evaluating child literacy program outcomes, and others interested in the impact of home-based, family literacy programs.

The next section presents the methodology and the instrument employed in this evaluation. That section is followed by sections on findings, conclusions, and recommendations.

METHODOLOGY

This section describes the methodology employed in this evaluation. First, the general design of the evaluation is presented, followed by a description of the Even Start children in the sample, followed next by an explanation of vocabulary instrument itself, and ending with the data analysis procedures.

Evaluation Design

This is an evaluation of the vocabulary outcomes of the Even Start program for the children in the client families. The language arts and readiness for school outcomes for a sample of children in the program were evaluated previously by AEL staff (Meehan, 1997). The Monongalia County Schools Even Start staff chose to expand the evaluation of the literacy outcomes for children by including a measure of vocabulary in the next program year. After reviewing several alternative measures, Even Start staff selected the *Peabody Picture Vocabulary Test-III* (PPVT-III) to administer in the 1998-99 program year (Dunn & Dunn, 1997a, 1997b).

To assess changes in vocabulary in the Even Start children, staff administered the PPVT-III on the pretest-posttest basis in the program year. Even Start Family Educators individually administered the PPVT-III in the fall as part of their planned home visits. Then, they administered a different form of the PPVT-III in the spring, again during their planned visits to the Even Start families. The Even Start Family Educators scored the completed PPVT-III instruments and compiled the results, along with test administration dates, on a summary sheet. This summary sheet included the child's date of birth, test form, the raw score, and the standard score. This summary sheet used a project identification number for each child instead of actual names. Thus, AEL evaluators did not know the names of the children in the sample because AEL did not have a name-to-number listing.

Children in Sample

The number of families in the Monongalia County Even Start Program varied over the years as a result of a 1996-97 program self-assessment analysis. For example, in the program's early years, there were up to 62 families enrolled. Beginning in 1997-98, 45 families were served so that the intensity of contact hours could be increased (Even Start Staff, 1998). Within each family, one adult and one child were targeted to complete the outcome measures. However, for some of the families, the targeted child was below the age for which PPVT-III norms applied. The sample of children completing the PPVT-III in the 1998-99 program year were those in families enrolled in the program for that year who were old enough to have norms in the PPVT-III technical manuals. The number of families enrolled declined slightly from the previous year.

Not all targeted children completed both the pretest and posttest forms of the PPVT-III. There were 32 children in the final sample with both pretest and posttest scores (one child invalidated the pretest administration).

Within the sample of 32 Even Start children in this study were two subgroups. These subgroups were formed on the basis of additional information about them that the Even Start Family educators possessed. In one subgroup were children for which English was identified as their second language. Five children were in that ESL group. In the other subgroup were children who had an active individualized education plan (IEP). There were 10 children in that subgroup. The two subgroups were not mutually exclusive, but only one child in the sample was in both subgroups.

Vocabulary Instrument

The *Peabody Picture Vocabulary Test-III* is an individually administered, untimed, norm-referenced test. As the name indicates, the present version is the third one in the series. (The first two were published in 1959 and 1981, respectively.) The PPVT-III is designed for persons aged 2½ through 90+ years. It serves two main purposes: (1) as an achievement test of receptive (hearing) vocabulary attainment for standard English, and (2) as a screening test of verbal ability.

The PPVT-III is available in two parallel forms, designated as Form IIIA and Form IIIB. Each form contains four training items and 204 test items. These test items are grouped into 17 sets of 12 items each. The items are arranged in order of increasing difficulty. Each item consists of four black and white illustrations arranged on a page called a picture plate. The task of the subject is to select the one picture on the page that best represents the meaning of the stimulus word presented orally by the test administrator. Item sets that are far too easy or too hard are not administered. Testing time averages only 11 to 12 minutes because most individuals take only five sets, or 60 items of the appropriate difficulty.

Reliability information for the PPVT-III is presented in the technical manual (Chapter 4, Williams & Wang, 1997). The internal consistency reliabilities (Coefficient Alpha) for both forms of the PPVT-III ranged from .92 to .98 for the 25 standardization age groups with a median reliability of .95, also for both forms. The split-half reliabilities for the same 25 standardization age groups ranged from .86 to .97 for both forms, with a median reliability of .94 for both Form IIIA and Form IIIB. All persons in the standardization groups took both forms of the PPVT-III, allowing the computation of the alternate-forms coefficient of equivalence, a correlation. These correlations across the two forms ranged from .88 to .96 with a median of .94, indicating quite parallel forms. Test-retest reliability is an index of the stability of the test's scores. Here, the developers randomly selected 226 persons in four of the age groups and administered both forms of the instrument with an average of 42 days between administrations. Test-retest reliabilities for the four age group samples ranged from .91 to .94 with little or no difference between the two forms.

Validity information for the PPVT-III is presented in Chapter 5 of the technical manual (Williams & Wang, 1997). In terms of content validity, items were selected from a pool of standard English words in 20 common content areas and that could be depicted by an illustration. Guidelines for selection included the following: related to important life skills; not to use homonyms, words that required specialized knowledge, or words adapted from another language. With respect to construct validity, the PPVT-III is a test of vocabulary; therefore it is a measure of verbal ability. The developers cite data from several other tests that support the conclusion that the vocabulary section is the most important scale or test within those measures. But, the PPVT-III measures receptive vocabulary only, while the others measure expressive language. For criterion-related validity, the PPVT-III was correlated with three intelligence and two oral language measures. Correlations of both of the PPVT-III to the intelligence measures' vocabulary sections ranged from .80 to .92. Correlations of both forms of the PPVT-III to the pair of oral language scales ranged from .63 to .83. Last, the PPVT-III did discriminate among special populations of children and adults who were matched with similar children and adults from the national standardization study.

Data Analysis Procedures

A unique and cost effective aspect of this study was that the majority of the data for this evaluation were collected by the Even Start program staff. As explained above, the Family Educators administered the PPVT-III twice to each child during the year (fall and spring). They scored the completed instruments and recorded the information on summary sheets. Using project-supplied identification numbers for each child, the summary sheets also included the child's date of birth as well as the test form, raw score, and standard score for each administration.

The PPVT-III summary sheets were mailed to AEL for analysis and interpretation. AEL evaluators created an SPSS database for the summary sheet information. AEL staff decided to add the PPVT-III age-equivalent score to the database for use in analysis. Actual ages in months were computed from the birthdate and test administration dates. The age-equivalent values were found in the PPVT-III technical manual (Williams & Wang, 1997).

Analysis of the treatment months was straightforward. Instrument administration dates in the SPSS database were used to compare the treatment months. Here, months were rounded to the nearest whole month with the 15th day as the midpoint (except February). These were done by hand and double checked for accuracy.

Next, descriptive statistics of both the pretest and posttest PPVT-III scores were generated. The coefficient of variation (the standard deviation divided by the mean) was computed manually and double checked. These data were compiled into one table with each administration being one row of data.

Then, t-tests for dependent means by the matched pairs technique were computed by the SPSS software for the PPVT-III scores. This was done for the full group first, the active IEP subgroup second, and the ESL subgroup third. The coefficients of variation were computed next. Effect size, defined as "the *degree* to which the phenomenon is present in the population" (Cohen, 1977, p. 9) or an "indication for practical meaningfulness" (Fan, 1999), were also calculated. Cohen's formula was used to compute the three effect sizes and his descriptors were employed. This was done by hand and double checked for accuracy. Then, a table was constructed of the essential t-test data, the coefficients of variation, and the effect sizes.

EVALUATION FINDINGS

This section presents and displays the findings from the evaluation of vocabulary outcomes for the children in the Monongalia County Even Start Program.

Ages and Treatment Months

The average age of the 32 children in this study was 51.67 months or four years and four months. The mode and median age in months both were 51.00.

The treatment period for this evaluation was the 1998-99 Even Start program year. Pretests and posttests of the PPVT-III were completed as part of the regular home visits by the Even Start Family Educators. Of the 32 children with both scores, 15 had eight months of treatment, 10 had seven months, and the rest of the children had nine (N=1), six (N=2), five (N=2), or three (N=2) months. The mean number of treatment months was 6.93 with a standard deviation of 1.638.

Vocabulary t-Test Results

Table 1 displays the descriptive statistics for the PPVT-III pretest and posttest standard scores. Note that there was one pretest score for one child that was not usable. Possible standard scores could range from 90 to 160 points. The pretest scores ranged from 53.00 up to 115.00 with the mode and median both being 93.00. The mean pretest score was 90.53 and the standard deviation was 14.37, yielding a coefficient of variations of .159. The standard error of the mean was 2.54.

At posttest administration of the PPVT-III to the Even Start children, the scores ranged from 77.00 to 119.00. The posttest mode increased five points to 98.00 while the median increased seven points to 100.00. The mean posttest score increased more than nine points to 99.76 while the standard deviation decreased more than five points to 9.24. The coefficient of variation and standard error of the mean both declined to .093 and 1.61, respectively.

Table 1

Descriptive Statistics for the PPVT-III Pretest and Posttest Standard Scores

Number of Children	Minimum[a]	Maximum	Mode	Median	Mean	Standard Deviation	Co - Efficient of Variation	Standard Error of Mean
Pretest Administration								
32	53.00	115.00	93.00	93.00	90.53	14.37	.159	2.54
Posttest Administration								
33	77.00	119.00	98.00	100:00	99.76	9.24	.093	1.61

[a] Standard scores could range from 40 to 160.

Table 2 displays the pretest and posttest PPVT-III standard score t-test and effect size results for the full group and two subgroups of Even Start children. For the 32 children with both scores there was a 9.28 point gain on PPVT-III vocabulary test. This gain yielded a t-value of 4.51, which was significant at the .0001 level. The effect size for the gain in the vocabulary score was .65, which is "moderate" in Cohen's set of descriptors.

The t-test results for the 10 children with active IEPs are displayed in the second row in Table 2. For the active IEP children, the vocabulary gain was much larger than the full group: it was a gain of a full 15.50 points. The t-value of 3.56 was slightly less (owing to the smaller size of the subgroup), but still it was significant at the .01 level. The effect size was 1.13, above the start of the "large" category (.80) in Cohen's scheme. Since it is more than the .30 difference between both the small to moderate and moderate to large category values, the descriptor of "very large" was chosen to describe the effect size for the active IEP subgroup on the vocabulary measure.

The t-test results for the five children in the ESL subgroup are displayed in the third row in Table 2. Again, at 14.80 points, the ESL subgroup gain was much larger than that of the full group and just a little less than that of the active IEP subgroup. The t-value of 3.37 was slightly less than that of the active IEP group (owing, again, to the smaller size of the subgroup). However, the probability of .028 was significant at the .05 level. The ESL subgroup effect size was 1.05 , which is large in Cohen's scheme.

Age Equivalent Results

In addition to the analysis of the standard scores, the age equivalent scores for the PPVT-III pretest and posttest administrations were analyzed. The average age-equivalent of vocabulary for the pretest administration, for the full group, was 3.713 or three years and seven months. The pretest range was from 1.1 to 9.1 with a median of 3. 075. The average age-equivalent of vocabulary for the posttest administration was 4.845 or four years and eight months. The posttest range again was from 1.1 to 9.1, but the standard deviation decreased from 2.105 to 1.852. The posttest median age-equivalent increased to 5.020.

Table 2

Pretest and Posttest PPVT-III Standard Score
t-Test and Effect Size Results for Full Group and Two Subgroups

Administration Time	Number of Pairs	Mean*	Standard Deviation	Co-Efficient of Variation	Standard Error of Mean	t-Value	Probability	Mean Score Difference	Effect Size
Full Group									
Pretest	32	90.53	14.37	.159	2.54	4.51	.000***	9.28	0.65#
Posttest		99.81	9.38	.093	1.66				
Active IEP Subgroup									
Pretest	10	80.80	13.70	.170	4.33	3.56	.006**	15.50	1.13##
Posttest		96.30	12.44	.129	3.93				
ESL Subgroup									
Pretest	5	76.00	14.09	.185	6.30	3.37	.028*	14.80	1.05##
Posttest		90.80	13.42	.148	6.00				

* Standard scores could range from 40 to 160.

* Significant at .05.
** Significant at .01.
*** Significant at .0001.

Effect size=Moderate.
Effect size=Large.
Effect size=Very Large.

CONCLUSIONS AND RECOMMENDATIONS

Several conclusions and recommendations can be drawn from the findings of this study. The conclusions are based on combined inspection of the tests of statistical significance and the effect sizes. Recommendations regarding the PPVT-III are offered to the Monongalia County Even Start staff.

Conclusions

There was a pretest to posttest gain of 9.28 points on the PPVT-III for the full group of students in the sample. The resultant t-value of 4.51 was significant at the .0001 level and the effect size was moderate. The Monongalia County Even Start Program had a moderate impact on the vocabulary gains of the children in the full sample. It is very certain that the observed gain in vocabulary scores was not due to statistical chance. The magnitude of the effect (gain) is meaningful in social and behavioral sciences. So, we conclude that the vocabulary gain for the full group was meaningful both statistically and practically.

A subgroup of 10 students in the full group were identified as having an active IEP. This subgroup experienced a pretest to posttest gain of 15.50 points on the PPVT-III. The t-value was 3.56, significant at the .01 level, and the effect size was very large. The Monongalia County Even Start Program had a very large impact on the vocabulary gains of the children in the subgroup with active IEPs. There is a very high degree of certainty that the vocabulary gains for the active IEP children are not due to chance statistically and, further, the magnitude of the gains are meaningful in the practical sense. Thus, we conclude with much confidence that the vocabulary gains for this subgroup are meaningful in both the statistical and practical sense.

Next, a subgroup of five children in the full group were identified as having English as their second language. This subgroup had a 14.80 pretest to posttest gain on the PPVT-III. The t-value was 3.37, significant at the .05 level, and the effect size was large. The Monongalia County Even Start Program had a large impact on the vocabulary gains of the children in the ESL subgroup. There is a very high degree of certainty that the vocabulary gains for the ESL subgroup are not due to chance statistically and that the magnitude of the gains also is meaningful in the practical sense. Therefore, we conclude with much confidence that the vocabulary gains for the ESL subgroup are meaningful in both the statistical and practical sense.

Looking at the vocabulary gains in terms of their age-equivalent scores adds another perspective to describing the impact of the Monongalia County Even Start Program on the children in the sample. The average age-equivalent score increased from 3.7 at pretest to 4.8 at posttest, or 13 months. The average pretest to posttest treatment period was seven months. So, the average PPVT-III age-equivalent score increased 13 months in the 7 months of the program year. This results in a net gain of 6 months above growth in vocabulary expected for normal development. Therefore, we conclude that the children in the sample nearly doubled their vocabulary growth as a result of being in the Monongalia County Even Start Program.

Recommendations

Even Start program staff's decision to utilize another child outcome measure for their program yielded very positive results. The use of the PPVT-III instrument in the 1998-99 program year showed moderate impact on the children in the full sample and even larger impact for the children in the two subgroups (active IEP and ESL). Staff can be certain that their program impacts the vocabulary gains of children in their families. Moreover, the vocabulary gains are nearly double what would be expected in one typical treatment year. The recommendation here is for staff to acknowledge and celebrate these gains in students' vocabulary. These positive findings in the area of vocabulary for the children in the Even Start program can be added to other positive findings in language arts and readiness for school, which were discovered in prior evaluations of the program.

With these convincing (statistical and practical) findings in vocabulary gains by children in the Even Start program, staff may want to continue to administer the PPVT-III in the future. The Even Start staff devoted time and energy to pick the PPVT-III from a pool of instruments purported to measure vocabulary. Since the PPVT-III is well known, used quite a lot by others, and did yield very positive results, there would be merit in continuing to administer it to children in the Even Start families to demonstrate program impacts. The fact that the PPVT-III measures vocabulary through hearing and picture recognition makes it unique among vocabulary measures. Staff are trained to administer and score the PPVT-III and it doesn't appear to be a burden to administer during the visits to the client's homes by the Family Educators.

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APPENDIX

Completed Evaluation Standards Checklist

Citation Form

The Program Evaluation Standards (1994, Sage) guided the development of this (check one):

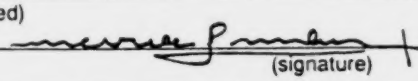
____ request for evaluation plan/design/proposal
____ evaluation plan/design/proposal
____ evaluation contract
__xx__ evaluation report
____ other: _____

To interpret the information provided on this form, the reader needs to refer to the full text of the standards as they appear in Joint Committee on Standards for Educational Evaluation, *The Program Evaluation Standards* (1994), Thousand Oaks, CA, Sage.

The *Standards* were consulted and used as indicated in the table below (check as appropriate):

Descriptor		The Standard was deemed applicable and to the extent feasible was taken into account.	The Standard was deemed applicable but could not be taken into account.	The Standard was not deemed applicable.	Exception was taken to the Standard.
U1	Stakeholder Identification	xxxx			
U2	Evaluator Credibility	xxxx			
U3	Information Scope and Selection	xxxx			
U4	Values Identification	xxxx			
U5	Report Clarity	xxxx			
U6	Report Timeliness and Dissemination	xxxx			
U7	Evaluation Impact	xxxx			
F1	Practical Procedures	xxxx			
F2	Political Viability			xxxx	
F3	Cost Effectiveness	xxxx			
P1	Service Orientation	xxxx			
P2	Formal Agreements	xxxx			
P3	Rights of Human Subjects	xxxx (Local	Staff Responsibility)		
P4	Human Interactions	xxxx			
P5	Complete and Fair Assessment	xxxx			
P6	Disclosure of Findings	xxxx			
P7	Conflict of Interest	xxxx			
P8	Fiscal Responsibility	xxxx			
A1	Program Documentation	xxxx			
A2	Context Analysis	xxxx			
A3	Described Purposes and Procedures	xxxx			
A4	Defensible Information Sources	xxxx			
A5	Valid Information	xxxx			
A6	Reliable Information	xxxx			
A7	Systematic Information	xxxx			
A8	Analysis of Quantitative Information	xxxx			
A9	Analysis of Qualitative Information			xxxx	
A10	Justified Conclusions	xxxx			
A11	Impartial Reporting	xxxx			
A12	Metaevaluation	xxxx			

Name Merrill L. Meehan (typed) Date: December 13, 1999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